



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,757	12/30/2003	Khosro Shamsaifar	WJT08-0059 (JSF001-0008)	2735
7590	03/31/2005		EXAMINER HAM, SEUNGSOOK	
William J. Tucker 14431 Goliad Dr. Box #8 Malakoff, TX 75148			ART UNIT 2817	PAPER NUMBER

DATE MAILED: 03/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/748,757

Applicant(s)

SHAMSAIFAR ET AL.

Examiner

Seungsook Ham

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 February 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                             |                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                 | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                        | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/30/03</u> | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the subject matter of claims 8 and 19 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The disclosure is objected to because of the following informalities:

Art Unit: 2817

The status of the US Applications listed in the specification (p. 8, lines 5-8, lines 20-22, page 10, lines 17-20) should be updated.

Appropriate correction is required.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The subject matter of claims 8 and 19 are not disclosed in the specification. It should be noted that incorporated by reference of essential material is only allowed for US Patents or US Patent Application Publications.

### ***Claim Objections***

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 14 (second occurrence) - 20 been renumbered to 16-22.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 8 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to

Art Unit: 2817

which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification does not describe the subject matter of claims 8 and 19. Thus, it is unclear as to how one skill in the art would provide "wherein a low loss isolation material is used to isolate the outer bias metallic contact and the metallic electrode on the tunable dielectric."

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 6, 8-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3, "the aperture" lacks antecedent basis and also confusing as to how "the aperture" is related to "an iris" recited in claim 1. It appears that "the aperture" and "an iris" refer to the same element. Claim 14 is also rejected for the same reason above.

In claim 6, "said tunable varactors" lacks antecedent basis.

Claims 8 and 19 cannot be understood as to what are "the outer bias metallic contact", "the metallic electrode on the tunable dielectric."

In claim 9, "said tunable varactors" lacks antecedent basis.

In claim 10, "said MEM tunable capacitor" lacks antecedent basis. It should be corrected to --said MEM tunable capacitors--.

In claim 11, "said MEM tunable capacitor" lacks antecedent basis (claim 11 should be dependent on claim 10 instead of claim 1).

In claim 12, line 17, "said at least one coaxial combline resonator" lacks antecedent basis.

In claim 13, "said at least one tunable varactor" lacks antecedent basis.

In claim 16, "said voltage-controlled tunable filter" lacks antecedent basis.

In claim 20, "said tunable varactors" lacks antecedent basis.

In claims 21 and 22, "said MEM tunable varactor" lacks antecedent basis.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 8, 12-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sroka (US '748) or Atokawa et al. (US '620) in view of Liang et al. (US '883) and Kosugi et al. (EP '424).

Sroka (figs. 1 and 2) discloses a voltage-controlled tunable filter comprising: a plurality of coaxial combline resonators 1, 2; at least one of the plurality of coaxial resonators includes at least one metallized through-hole 4 (col. 3, lines 60-65); at least one tunable varactor associated with the plurality of coaxial resonators 9, 9'.

Atokawa et al. (figs. 2, 3 and 5) also discloses a voltage-controlled tunable filter comprising: a plurality of coaxial combline resonators 2-6; at least one of the plurality of

Art Unit: 2817

coaxial resonators includes at least one metallized through-hole 23 (see fig. 2); at least one tunable varactor associated with the plurality of coaxial resonators D55-D57 (see fig. 5).

Sroka and Atokawa et al. do not show an input/output coupling metallization disposed on a surface of the coaxial resonators, and an iris/aperture provided between the resonators for coupling. However, such design techniques are well known in the art. Sokola (fig. 1) discloses a coaxial dielectric filter having input/output couplings 14, 18 are disposed on a surface of a dielectric block/resonator for surface mounting. Kosugi et al. (figs. 3-5) discloses a coaxial dielectric filter having an iris/aperture disposed between the resonators for coupling.

It would have been obvious to one of ordinary skill in the art to provide input/output coupling metallization on the surface of the coaxial resonators in the device of Sroka or Atokawa et al. for surface mounting as shown by Sokola (see abstract). Moreover, it would have been obvious to one of ordinary skill in the art to provide an iris/aperture between the resonators in the modified device of Sroka or Atokawa et al. for coupling between the resonators as shown by Kosugi et al. (see abstract).

Claims 6, 7, 9-11, 17, 18, and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sroka (US '748) or Atokawa et al. (US '620) in view of Liang et al. (US '883) and Kosugi et al. (EP '424) as applied to claims 1 and 12 above, and further in view of Liang et al. (US '883).

The modified device of Sroka or Atokawa et al. does not show the tunable varactor can be made of low dielectric constant substrate (e.g., tunable dielectric

Art Unit: 2817

varactors) or MEM tunable capacitors. However, such tunable varactors are well known in the art. Liang et al. discloses a tunable filter having tunable dielectric varactors (figs. 8 and 9) or MEM tunable capacitors.

It would have been obvious to one of ordinary skill in the art to use tunable dielectric capacitors or MEM tunable capacitors as the tunable varactors in the modified device of Sroka or Atokawa et al. since both tunable capacitors and varactors are functionally equivalent and also for lower loss and higher power-handling as taught by Liang et al. (col. 10, lines 20-35).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Toncich (US '251) discloses a tunable filter having a ferro-electric capacitors;

Zhu et al. (US '817) discloses a tunable dielectric varactors; and

Kwon et al. (US '304) discloses a tunable filter using MEM capacitors.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seungsook Ham whose telephone number is (571) 272-2405. The examiner can normally be reached on Monday-Thursday, 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 2817

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Seungsook Ham  
Primary Examiner  
Art Unit 2817

sh